

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/083,849 C
Source: TFW16
Date Processed by STIC: 07/27/2005

ENTERED



IFW16

RAW SEQUENCE LISTING

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:57

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw

```

3 <110> APPLICANT: Noteborn, Mathieu
4   Rohn, Jennifer Leigh
5   Mumberg, Dominik
6   Donner, Peter
8 <120> TITLE OF INVENTION: Modifications of Apoptin
10 <130> FILE REFERENCE: 2906-4996.1
12 <140> CURRENT APPLICATION NUMBER: 10/083,849C
13 <141> CURRENT FILING DATE: 2001-10-19
15 <150> PRIOR APPLICATION NUMBER: US 60/242,397
16 <151> PRIOR FILING DATE: 2000-10-20
18 <160> NUMBER OF SEQ ID NOS: 20
20 <170> SOFTWARE: PatentIn version 3.1
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 121
24 <212> TYPE: PRT
25 <213> ORGANISM: Chicken anemia virus
27 <220> FEATURE:
28 <221> NAME/KEY: MISC_FEATURE
29 <222> LOCATION: (1)..(121)
30 <223> OTHER INFORMATION: Apoptin (a small protein derived from chicken anemia virus)
encod
31   ed by pCMV-Vp3 and by GFP-Apoptin constructs
34 <400> SEQUENCE: 1
36 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
37 1      5      10      15
40 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
41      20      25      30
44 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
45      35      40      45
48 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
49      50      55      60
52 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
53 65      70      75      80
56 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Arg
57      85      90      95
60 Val Ser Glu Leu Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Arg Pro
61      100     105     110
64 Arg Thr Ala Arg Arg Arg Ile Arg Leu
65      115     120
68 <210> SEQ ID NO: 2
69 <211> LENGTH: 121
70 <212> TYPE: PRT
71 <213> ORGANISM: Chicken anemia virus
73 <220> FEATURE:

```

RAW SEQUENCE LISTING

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:57

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw

74 <221> NAME/KEY: MUTAGEN
 75 <222> LOCATION: (1)..(121)
 76 <223> OTHER INFORMATION: Apoptin protein encoded by pIRESneo alanine mutants
 79 <220> FEATURE:
 80 <221> NAME/KEY: MISC_FEATURE
 81 <223> OTHER INFORMATION: Differs from Apoptin protein encoded by pCMV-Vp3 and by GFP-Apopt
 82 in constructs by replacement of the arginine residue at position
 83 116 with a lysine residue
 86 <400> SEQUENCE: 2
 88 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 89 1 5 10 15
 92 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 93 20 25 30
 96 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 97 35 40 45
 100 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 101 50 55 60
 104 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
 105 65 70 75 80
 108 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Arg
 109 85 90 95
 112 Val Ser Glu Leu Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Arg Pro
 113 100 105 110
 116 Arg Thr Ala Lys Arg Arg Ile Arg Leu
 117 115 120
 120 <210> SEQ ID NO: 3
 121 <211> LENGTH: 121
 122 <212> TYPE: PRT
 123 <213> ORGANISM: Chicken anemia virus
 125 <220> FEATURE:
 126 <221> NAME/KEY: MUTAGEN
 127 <222> LOCATION: (1)..(121)
 128 <223> OTHER INFORMATION: mutant Ala(5)-86 of 5-alanine linker-scanning mutant series
 of Ap
 129 optin
 132 <400> SEQUENCE: 3
 134 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 135 1 5 10 15
 138 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 139 20 25 30
 142 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 143 35 40 45
 146 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 147 50 55 60
 150 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
 151 65 70 75 80
 154 Pro Lys Pro Pro Ser Ala Ala Ala Ala Asp Pro Ser Glu Tyr Arg
 155 85 90 95
 158 Val Ser Glu Leu Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Arg Pro
 159 100 105 110

RAW SEQUENCE LISTING

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:57

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw

162 Arg Thr Ala Arg Arg Arg Ile Arg Leu
 163 115 120
 166 <210> SEQ ID NO: 4
 167 <211> LENGTH: 121
 168 <212> TYPE: PRT
 169 <213> ORGANISM: Chicken anemia virus
 171 <220> FEATURE:
 172 <221> NAME/KEY: MUTAGEN
 173 <222> LOCATION: (1)..(121)
 174 <223> OTHER INFORMATION: mutant Ala(5)-91 of 5-alanine linker-scanning mutant series
 of Ap

175 optin
 178 <400> SEQUENCE: 4
 180 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 181 1 5 10 15
 184 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 185 20 25 30
 188 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 189 35 40 45
 192 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 193 50 55 60
 196 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
 197 65 70 75 80
 200 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Ala Ala Ala Ala Ala Arg
 201 85 90 95
 204 Val Ser Glu Leu Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Arg Pro
 205 100 105 110
 208 Arg Thr Ala Arg Arg Arg Ile Arg Leu
 209 115 120

212 <210> SEQ ID NO: 5
 213 <211> LENGTH: 121
 214 <212> TYPE: PRT
 215 <213> ORGANISM: Chicken anemia virus
 217 <220> FEATURE:
 218 <221> NAME/KEY: MUTAGEN
 219 <222> LOCATION: (1)..(121)
 220 <223> OTHER INFORMATION: mutant Ala(5)-96 of 5-alanine linker-scanning mutant series
 of Ap

221 optin
 224 <400> SEQUENCE: 5
 226 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 227 1 5 10 15
 230 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 231 20 25 30
 234 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 235 35 40 45
 238 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 239 50 55 60
 242 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
 243 65 70 75 80
 246 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Ala

RAW SEQUENCE LISTING

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:57

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw

247 85 90 95
 250 Ala Ala Ala Ala Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Arg Pro
 251 100 105 110
 254 Arg Thr Ala Arg Arg Arg Ile Arg Leu
 255 115 120
 258 <210> SEQ ID NO: 6
 259 <211> LENGTH: 121
 260 <212> TYPE: PRT
 261 <213> ORGANISM: Chicken anemia virus
 263 <220> FEATURE:
 264 <221> NAME/KEY: MUTAGEN
 265 <222> LOCATION: (1)..(121)
 266 <223> OTHER INFORMATION: mutant Ala(5)-101 of 5-alanine linker-scanning mutant series

of A

267 poptin
 270 <400> SEQUENCE: 6
 272 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 273 1 5 10 15
 276 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 277 20 25 30
 280 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 281 35 40 45
 284 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 285 50 55 60
 288 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
 289 65 70 75 80
 292 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Arg
 293 85 90 95
 296 Val Ser Glu Leu Ala Ala Ala Ala Thr Thr Thr Pro Ser Arg Pro
 297 100 105 110
 300 Arg Thr Ala Arg Arg Arg Ile Arg Leu
 301 115 120
 304 <210> SEQ ID NO: 7
 305 <211> LENGTH: 121
 306 <212> TYPE: PRT
 307 <213> ORGANISM: Chicken anemia virus
 309 <220> FEATURE:
 310 <221> NAME/KEY: MUTAGEN
 311 <222> LOCATION: (1)..(121)
 312 <223> OTHER INFORMATION: mutant Ala(5)-106 of 5-alanine linker-scanning mutant series

of A

313 poptin
 316 <400> SEQUENCE: 7
 318 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
 319 1 5 10 15
 322 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
 323 20 25 30
 326 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
 327 35 40 45
 330 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
 331 50 55 60

RAW SEQUENCE LISTING

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:57

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw

```

334 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
335 65                      70                      75                      80
338 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Arg
339                      85                      90                      95
342 Val Ser Glu Leu Lys Glu Ser Leu Ile Ala Ala Ala Ala Ala Arg Pro
343                      100                     105                     110
346 Arg Thr Ala Arg Arg Arg Ile Arg Leu
347                      115                     120

```

350 <210> SEQ ID NO: 8

351 <211> LENGTH: 121

352 <212> TYPE: PRT

353 <213> ORGANISM: Chicken anemia virus

355 <220> FEATURE:

356 <221> NAME/KEY: MUTAGEN

357 <222> LOCATION: (1)..(121)

358 <223> OTHER INFORMATION: mutant Ala(5)-111 of 5-alanine linker-scanning mutant series
of A

359 poptin

362 <400> SEQUENCE: 8

```

364 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
365 1                      5                      10                      15
368 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
369                      20                      25                      30
372 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly
373                      35                      40                      45
376 Cys Ala Asn Ala Arg Ala Pro Thr Leu Arg Ser Ala Thr Ala Asp Asn
377                      50                      55                      60
380 Ser Glu Ser Thr Gly Phe Lys Asn Val Pro Asp Leu Arg Thr Asp Gln
381 65                      70                      75                      80
384 Pro Lys Pro Pro Ser Lys Lys Arg Ser Cys Asp Pro Ser Glu Tyr Arg
385                      85                      90                      95
388 Val Ser Glu Leu Lys Glu Ser Leu Ile Thr Thr Thr Pro Ser Ala Ala
389                      100                     105                     110
392 Ala Ala Ala Arg Arg Arg Ile Arg Leu
393                      115                     120

```

396 <210> SEQ ID NO: 9

397 <211> LENGTH: 121

398 <212> TYPE: PRT

399 <213> ORGANISM: Chicken anemia virus

401 <220> FEATURE:

402 <221> NAME/KEY: MUTAGEN

403 <222> LOCATION: (1)..(121)

404 <223> OTHER INFORMATION: mutant Ala(5)-116 of 5-alanine linker-scanning mutant series
of A

405 poptin

408 <400> SEQUENCE: 9

```

410 Met Asn Ala Leu Gln Glu Asp Thr Pro Pro Gly Pro Ser Thr Val Phe
411 1                      5                      10                      15
414 Arg Pro Pro Thr Ser Ser Arg Pro Leu Glu Thr Pro His Cys Arg Glu
415                      20                      25                      30
418 Ile Arg Ile Gly Ile Ala Gly Ile Thr Ile Thr Leu Ser Leu Cys Gly

```

VERIFICATION SUMMARY

DATE: 07/27/2005

PATENT APPLICATION: US/10/083,849C

TIME: 11:39:58

Input Set : A:\SequenceListing2.txt

Output Set: N:\CRF4\07272005\J083849C.raw